

In the Claims

Please cancel claim 1 and add claims 41-55 as follows:

1 ~~41~~. A method of nucleic acid amplification comprising:

performing nucleic acid amplification on a target polynucleotide using a nucleic acid polymerase having 5' to 3' nuclease activity, a primer capable of hybridizing to the target polynucleotide, and an oligonucleotide probe under amplification conditions such that the probe hybridizes to the target polynucleotide 3' relative to the primer and the probe does not hybridize with itself to form a hairpin structure,

the oligonucleotide probe having at one end a fluorescent reporter and at the other end a quencher that quenches the fluorescence of the reporter molecule when both the fluorescent reporter and quencher are attached to the probe,

under conditions such that digestion of the oligonucleotide probe by the polymerase during amplification is effective to separate the reporter from the quencher, whereby a fluorescence signal of the reporter is increased.

B2 2 ~~42~~. The method of claim ~~41~~¹, wherein the polymerase is a thermostable nucleic acid polymerase.

3 ~~43~~. The method of claim ~~41~~¹, wherein the reporter is a fluorescein dye and the quencher is a rhodamine dye.

3 4 ~~44~~. The method of claim ~~43~~³, wherein the fluorescent reporter is attached to the 5' end of the probe.

4 5 ~~45~~. The method of claim ~~44~~⁴, wherein the probe is 15 to 60 nucleotides in length.

6 ~~46~~. The method of claim ~~44~~⁴, wherein the probe is 18 to 30 nucleotides in length.

7 ~~47~~. The method of claim ~~43~~³, wherein the fluorescent reporter is attached to the 3' end of

the probe.

8 ~~48~~. The method of claim ~~47~~⁷, wherein the probe is 15 to 60 nucleotides in length.

9 ~~49~~. The method of claim ~~47~~⁷, wherein the probe is 18 to 30 nucleotides in length.

10 ~~50~~. The method of claim ~~41~~¹, wherein the fluorescent reporter is attached to the 5' end of the probe.

11 ~~51~~. The method of claim ~~50~~¹⁰, wherein the probe is 15 to 60 nucleotides in length.

12 ~~52~~. The method of claim ~~50~~¹⁰, wherein the probe is 18 to 30 nucleotides in length.

13 ~~53~~. The method of claim ~~41~~¹, wherein the fluorescent reporter is attached to the 3' end of the probe.

14 ~~54~~. The method of claim ~~53~~¹³, wherein the probe is 15 to 60 nucleotides in length.

15 ~~55~~. The method of claim ~~53~~¹³, wherein the probe is 18 to 30 nucleotides in length.--

In the Abstract

Please replace the original Abstract with the following:

--Provided is a method of nucleic acid amplification. In one embodiment, the method comprises performing nucleic acid amplification on a target polynucleotide using a nucleic acid polymerase having 5' to 3' nuclease activity, a primer capable of hybridizing to the target polynucleotide, and an oligonucleotide probe under amplification conditions such that the probe hybridizes to the target polynucleotide 3' relative to the primer and the probe does not hybridize with itself to form a hairpin structure. The oligonucleotide probe has at one end a fluorescent reporter and at the other end a quencher that quenches the fluorescence of the reporter molecule

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when both the fluorescent reporter and quencher are attached to the probe. Digestion of the oligonucleotide probe by the polymerase during amplification is effective to separate the reporter from the quencher, whereby a fluorescence signal of the reporter is increased.--

REMARKS

Reconsideration of the application is respectfully requested. By the present amendment, claim 1 has been canceled, and claims 41-55 have been added. Accordingly, claims 41-55 are pending.

I. Amendments

Page 1 of the specification has been amended to update the priority information for the present application, and the abstract has been changed to reflect the current claims. Support for the claims can be found in original application Ser. No. 08/340,558 filed November 16, 1994 (which is incorporated by reference) in claims 1 to 4, and in the specification at lines 10-12 (probe lengths), for example.

II. Information Disclosure Statement

An Information Disclosure Statement, Form 1449, and cited references are enclosed herewith for the Examiner's consideration.

III. Previous Rejections

In the Office action mailed January 24, 2000, canceled claim 1 was rejected under 35 USC 112, second paragraph, 35 USC 102(b) over several references, and under the judicially created doctrine of obviousness-type double patenting. The rejections are believed to be moot in light of cancellation of claim 1.